PROPOSAL PAPER

Independent Technical Panel on Demand Management Measures
Final Report on California Landscape Water Use
12-08-15 Draft

Section: 7

Section Title: Complementary Policies and Regulation

Recommendation #: 1B – Product Standards for Irrigation Equipment – Sprinkler Bodies

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Background: Sprinkler bodies and other types of landscape irrigation emission devices can be purchased either with or without water saving features. It is well known in the landscape industry that the most common overhead popup spray-type sprinkler bodies sold are not efficient with regards to pressure regulation and the ability to prevent low head drainage. This is a documented source of water waste in many landscapes and can lead to misting and runoff. For instance, a recent study shows that one model of pressure regulating spray body achieves 14% less water use at 60 pounds per square inch inlet pressure (psi) and 19% less water use at 80 psi.[1]

Thousands of pop-up sprinkler bodies are sold in the State of California each year. However, the large majority of these products lack basic water conservation efficiencies that built-in pressure regulators and low-head drainage check valves provide.

There are significant regulatory gaps that diminish the widespread installation of water efficient emission devices. The MWELO requires that landscape irrigation emission devices meet the requirements of the American Society of Agricultural and Biological Engineers (ASABE) and International Code Council (ICC) Landscape Irrigation Sprinkler and Emitter Standard (ASABE-ICC 802-2014). However, not all new landscape installations are covered by the MWELO, nor does the MWELO cover sales of replacement units for an existing landscape. Replacement units are likely to make up the majority of product sales, since the lifetime of a new building (30 or more years) substantially exceeds the lifetime of most emission devices (perhaps 5-10 years). Since replacement sales are not currently regulated, most replacement units purchased in California do not contain the types of water efficiency features recommended here.

Additionally, ASABE-ICC 802-2014 contains test methods for a variety of products and features but relatively few performance standards (it does contain anti-burst requirements, for instance). Notably, requirements for integral pressure regulation are limited to sprinkler bodies for spray nozzles but not for bodies used with rotors.

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[1] The Metropolitan Water District of Southern California (MWD) awarded Rain Bird Corporation an Innovative Conservation Program (ICP) grant for a blind study conducted by the University of Arizona. Project results are contained in the Final Executive Summary for Innovative Conservation Program Project 143542: "Project PRS: Study of Pressure Regulated versus non-Pressure Regulated Sprays and Rotors." Excess pressure leads to excessive water application, misting, and potentially worse distribution uniformity and excessive throw distances.

Recommendation Purpose Statement: The ITP recommends that the California Energy Commission (CEC) adopt Title 20 water efficiency standards for landscape irrigation emission devices. The Title 20 standards would address the regulatory gap that exists for replacement units and for units serving new landscapes not covered by MWELO. The Title 20 standards would also have the effect of addressing the current gap in performance requirements for units installed in new landscapes since Title 20 applies to all product sales in California.

Additionally, US EPA is considering a WaterSense® specification for pressure regulated sprinkler bodies and high-efficiency nozzles.[2] Potential US EPA test data and proposed WaterSense standard(s) and test method(s) could help inform the CEC's efforts.

Specific Guidance Recommendation:

1) CEC should adopt Title 20 standards requiring pressure regulation and a built-in low-head drainage check valve for new sprinkler bodies.

2) CEC should evaluate additional potential standards for features and product types addressed by ASABE-ICC 802-2014 performance standards and/or test methods.

3) CEC should consult with US EPA WaterSense staff, the Department of Water Resources (DWR), as well as other relevant agencies and stakeholders, regarding these proposed standards.

[2]US Environmental Protection Agency, *WaterSense* Notice of Intent (NOI) to Develop a Draft Specification for Landscape Irrigation Sprinklers, May 22, 2014.
http://www3.epa.gov/watersense/docs/irrigation_sprinklers_NOI_508.pdf